

## **TITLE**

**SYSTEM FOR UTILIZING AUDIBLE, VISUAL AND TEXTUAL DATA WITH  
ALTERNATIVE COMBINABLE MULTIMEDIA FORMS OF PRESENTING  
INFORMATION FOR REAL-TIME INTERACTIVE USE BY MULTIPLE USERS IN  
DIFFERENT REMOTE ENVIRONMENTS**

## **CROSS-REFERENCE**

This application is a continuation-in part of U.S. Patent Application Serial No. 10/210,460 filed on July 31, 2002 continuation-in-part of U.S. Patent Application Serial No. 09/919,468 filed July 31, 2001.

## **FIELD OF THE INVENTION**

This invention relates to a system for utilizing audible, visual and textual data with multimedia forms of presenting information for real-time interactive use by multiple users in different remote environments. Specifically, the invention relates to a system for receiving, accessing, processing, storing, retrieving, transmitting and utilizing audible, visual and textual data that provides real-time interactive knowledge management over the Internet in support of activities conducted simultaneously by multiple users in different remote locations utilizing alternative combinable multimedia digital data forms of presenting the information to simplify and maximize human understanding.

## **BACKGROUND OF THE INVENTION**

The concept of the present invention has its genesis in solving the problem of "knowledge churn". It provides a new information management system capable of containing process knowledge and of utilizing this contained knowledge to manage common business, litigation and other activities in new ways.

Until the advent of computers, the traditional method of creating and maintaining knowledge was to store it in paper-based documents. A fundamental problem with this method is that the paper-based documents containing the stored knowledge are often archived in an inconvenient manner without an easy means of accessing and manipulating the stored data to

allow its modification or re-use in a different context. This often leads to non-use and aging of the stored information to an extent that the obsolescence of the information serves as a disincentive to its modification or re-use at a later time or in a different context. This disincentive leads to a habit on the part of many individuals to commit the stored information to memory instead of referring to the storage source when re-use is necessary. This in turn leads to inefficiencies in the conduct of activity within an organization because of the informality of permitting critical knowledge to reside entirely or at least partially within the minds of individuals instead of storing this information in a mutable, physical way that will allow its easy manipulation and re-use in different contexts.

This informal mental retention of critical information leads to a problem known as "knowledge churn", wherein the quality, depth and usefulness of the organizational knowledge that resides within the mind of an individual is compromised when that individual leaves the organization or is no longer responsible for performing the set of responsibilities to which the knowledge relates. This requires a new individual to "re-learn" a lot of the information that had already been internalized and used efficiently by the previously responsible organization member, leading to inefficiencies in organizational operations. For example, in the manufacture of a product, a value is attached to the product that takes into account the labor necessary to produce the product. If the individuals responsible for making the product leave the organization, a lot of the skills, knowledge and experience that are uniquely necessary to produce that product depart with them, leading to a "knowledge churn" which results in the expenditure of a higher level of resources than previously needed to produce the product, due to the need to train new individuals who do not yet possess the skills, knowledge and experience of those individuals who departed.

With the advent of computers, the problem of "knowledge churn" is capable of being solved in unique ways due to the power of the computer to receive, access, process, store and transmit digital information so that it can be manipulated and re-used in different contexts. From the advent of word processing programs to the increasing power of personal computers and the development of software enabling communication in alternative mediums, forms and formats, the problem of "knowledge churn" can be solved in the sense of being able to represent complex issues and concepts ways that people can easily understand based on their common experience of comprehending information in many different forms either alone or in combination with each

other at different times or at once. For example, textual-based content is capable of communicating information only in a basic written form, whereas a graphic presentation is capable of presenting communicating information in a richer visual environment. And just as "a picture is worth a thousand words", an audiovisual-based presentation of sequentially presented audible and visual images is "worth a thousand pictures" in its ability to convey a story to the user of the information. When these different forms of presenting information are combined with each other in various ways, complex issues become much easier to reduce to a more basic level of understanding. For example, a person can never actually experience the sensation of confronting a dinosaur, but the computer-aided graphic and audiovisual images used in the motion picture "Jurassic Park" permit the viewer to experience a fully rendered, computer-based simulation of the reality of being in physical proximity to a dinosaur that conjures up the assumed fear of being in such a situation in the human mind.

Thus, the advent of digital computer processing has permitted the presentation of information in different mediums, forms and formats to enable the representation of complex concepts in ways that truly enhance an understanding of the issue. When this technology is combined with transmission of the computer-based data over the Internet, more fundamental ways of communicating are possible, due to the possibility for interactive, multidirectional multimedia communications originated from anywhere in the world and made instantaneously available anywhere in the world to or from any number of different locations in the world simultaneously, if desired. This permits not only the mutable storage of critical information in a way that it can be easily manipulated for re-use, but also a multimedia digital representation of that information that permits an ease of understanding and a reality of experience that can be deployed over the Internet, not just in a broadcasting sense, but in an interactive, multidirectional sense so that different users can experience the information real-time, at the same time from anywhere in the world.

The present invention transforms this basic concept into an engineered system for managing the information known as a "Knowledge Kiosk"™, which is intended to represent the idea of a central repository of information where individuals come to convey and exchange knowledge. The present invention has initially been applied to the management of the litigation process, used by attorneys to manage information acquisition, exchange and workflow, and to the management of the insurance policy checking process, used by insurance brokers to manage

information associated with checking renewal policies and completing work product associated with the policy checking process. But it also has application to management of virtually any other type of information in any other type of endeavor or business. In either the litigation or insurance policy review process context, it permits all of the activity relating to the activity to be  
5 handled with a minimum of manpower. Such activities could include the litigation of complex legal issues to be efficiently managed (being particularly suited to permitting major litigation), the review of thousands of insurance policies, or another business activity involving years and hundreds or thousands of hours of effort. It accomplishes this purpose by eliminating the "knowledge churn" inherent in the involvement of multiple individuals in the process, through  
10 creation of a system which takes advantage of concepts utilized in linguistics and library science for uniform categorization of the various types information involved, combining this method of organization with computer software and internet technology to allow the receipt, access, processing, storage, retrieval, transmission, manipulation and utilization of audible, visual and textual data for real-time interactive use by multiple users in different remote environments, and  
15 utilizing alternative combinable multimedia digital data forms of presenting the information to simplify and maximize human understanding.

Accordingly, it is an object of the present invention to provide the presentation of information in different multimedia digital forms and formats to enable the representation of complex concepts in ways that enhance human understanding.

20 It is another object of the present invention to provide technology that is combined with transmission of the computer-based data over the Internet to permit interactive, multidirectional multimedia digital data communications originated from anywhere in the world and made instantaneously available anywhere in the world to or from any number of different locations simultaneously, if desired.

25 It is another object of the present invention to provide technology that permits not only the mutable storage of critical information in a way that it can be easily manipulated for re-use, but also a multimedia digital representation of that information that permits an ease of understanding and a reality of experience that can be deployed over the Internet, not just in a broadcasting sense, but in an interactive, multidirectional sense so that different users can  
30 experience the information real-time, at the same time from anywhere in the world.

It is another object of the present invention to provide an engineered system for managing information known as a "Knowledge Kiosk"<sup>TM</sup> intended to represent the idea of a central repository of information where individuals come to convey and exchange knowledge.

5 It is another object of the present invention to provide a system used for management of any type of information involved in any type of endeavor or business, including litigation and insurance, by managing information acquisition, exchange and workflow to be handled with a minimum of manpower so as to eliminate the "knowledge churn" inherent in the involvement of multiple individuals in such processes.

10 It is another object of the present invention to provide a system which takes advantage of concepts utilized in linguistics and library science for uniform categorization of the various types of information used in knowledge management.

15 It is another object of the present invention to provide a system which combines concepts for organizing information utilized in linguistics and library science with computer software and internet technology to allow the receipt, access, processing, storage, retrieval, transmission and utilization of audible, visual and textual data for real-time interactive use by multiple users in different remote environments, and utilizing alternative combinable multimedia digital data forms of presenting the information to simplify and maximize human understanding.

While these objects are set forth in sufficient detail, each example of an embodiment of the present invention may contain all or less than all of these objectives.

## 20 **SUMMARY OF THE INVENTION**

This invention relates to a system for utilizing audible, visual and textual data with multimedia forms of presenting information for real-time interactive use by multiple users in different remote environments. In general, it provides an idea integration tool manifest in a variety of software technology supported by an underlying infrastructure. The infrastructure is  
25 designed to allow and is used for receiving, accessing, processing, storing, retrieving, manipulating, transmitting and utilizing audible, visual and textual data. It can be constantly updated with data to provide real-time interactive knowledge management, preferably over the Internet, and support activities conducted simultaneously by multiple users in different remote locations utilizing alternative combinable multimedia digital data forms of presenting the  
30 information to simplify and maximize human understanding.

Concepts utilized in library science are implemented for uniform categorization of the information used in providing the knowledge management performed by the system, while concepts utilized in the science of linguistics are implemented for defining information acquisition, exchange and workflow to permit categorization of the managed information using the library science concept. These concepts are applied to the data stored in the system using a manual technique or automated process, or by a combination of the two. The data is classified according to what schema is appropriate to the type of data input and intended use of that data. In an example, the data is classified by its fundamental aspects, or elements, and also by its attributes. These characteristics can be used advantageously to create relationships between different data, parts of data or sets of data, depending upon the selected application. The relationships change as data is added to, deleted from or revised in the system. There may be functional or compositional relationships. The characteristics and data relationships enable users to manipulate data in new unrestricted ways. The present infrastructure provides flexibility in a dynamic work environment and is not limited by system constraints, such as is the case with text-based tables of information or traditional database systems. The managed information is stored in a database according to a unique schema which implements this categorization according to the needs of the user. Computer technology is combined with the science of media production for presentation of the managed information in various multimedia audible, visual and textual digital forms and formats, to enable its representation in ways that enhance human understanding, while computer software application programming is provided to make the system work over a computer network, preferably the Internet, to permit interactive, multidirectional, multimedia digital data communications originated from anywhere in the world and made instantaneously available anywhere in the world to or from any number of different locations simultaneously, if desired.

The database schema provides multiple levels of restricted access to the managed information in a way that allows the information to be included within categories each having subcategories that together implement the database schema. The information in each category or subcategory is retrievable independent of the information in any other category or subcategory, and information containing a common characteristic is retrievable from different categories or subcategories. The database schema is structured to allow a single item of managed information to be stored in at least two different locations when that information has been altered from its

original form, and a single item of managed information can be referred to by more than one designation in a way that permits each designation to reference other designations for that item.

The user accesses the managed information from an internet web page having access through a web server to the database. The web page contains a feature for providing access to the most common or most recent information used within a category or subcategory, and contains features enabling retrieval and processing of the managed information for presentation in each form in which the information is used. The web page also contains a feature for storing the information most commonly used by a given user according to a categorization established by that user.

The system contains features for selection of an audible, visual and/or textual broadcast of designated managed information according to a selected multimedia format, in such manner that the designated item is combinable with other items of managed information for presentation in a single broadcast, or such that the broadcast item(s) are presented in a combination of audible, visual and/or textual multimedia forms.

The system also contains features for searching each category or subcategory for a designated item of managed information, such that the search can be conducted by a match of data, identification information or classification information for that item. Finally, the search can be conducted in a manner that accommodates inaccuracies created by the search request and/or digitization of the searched item.

The system also contains the ability to track changes in documents over time. Original documents can be compared to working documents. As working documents progress over time by a user or multiple users, the system tracks the changes. Depending upon the application for which the system is used, such capability can provide a trail of changes. In the insurance industry, for example, this enables an efficient manner for checking policies and endorsements, and provides an audit trail of policy endorsement review activities that can improve consistency in checking policies and improve productivity and work quality through monitoring.

These and other advantages of the invention will become apparent from a perusal of the following detailed description of the presently preferred embodiments of the invention taken in connection with the accompanying drawings.

## **BRIEF DESCRIPTION OF THE DETAILED DRAWINGS**

Figure (1) shows a "Knowledge Pyramid" used to represent the four basic aspects of the system of the present invention as they are combined together to permit receiving, accessing, processing, storing, transmitting and utilizing audible, visual and textual data for real-time interactive use by multiple users in different remote environments utilizing alternative combinable multimedia forms of presenting the information to simplify and maximize human understanding.

Figure (2) shows the home page of a preferred embodiment of the system of the present invention as implemented on the Internet Web Site at "www.knowledge kiosk.com".

Figure (3) shows the "Passport" page of a preferred embodiment of the system of the present invention as implemented on the Internet Web Site at "www.knowledge kiosk.com", which serves as the launching point for accessing the various Knowledge Kiosks containing the data being managed by the system.

Figures (3A) and (3B) show a calendar page of a preferred embodiment of the system from which the "Passport" page and other areas of the Kiosk are accessible.

Figure (3C) shows an example of a page revealing predefined categories of information pertaining to a particular element, and shows the library of files and functionalities accessible from the page or related to the element.

Figure (4) shows the "Fast Tracks" page for the selected Knowledge Kiosk which provides access to the most commonly-used information in that particular Knowledge Kiosk.

Figure (5) shows an example database schema for implementing the present invention in a litigation support context entitled "Categories of a Litigation Knowledge Kiosk Elements - Overview".

Figure (6) shows an example database schema for implementing the present invention in a multi-tier litigation support context entitled "Overall Organization – Multi-Tier Litigation Knowledge Kiosk".

Figure (7) shows an example of a submission form completed by the user for storage of an item of information within a selected Knowledge Kiosk.

Figures (8A) through (8H) show examples of the various searches that can be conducted for retrieving a Knowledge Element from a particular Knowledge Kiosk

Figures (8I) and (8J) show an example of other search tools for retrieving an element from a particular kiosk.



Figure (9) shows an example of a "Knowledge Element Classification Profile" containing fields providing information describing and classifying the Knowledge Element.

Figures (10A) through (10D) show an example of an advanced search designed to retrieve a multimedia rendering of a particular Knowledge Element.

5        Figures (11A) through (11D) show an example of an advanced boolean search conducted to locate a particular data string within any Knowledge Element in the Knowledge Kiosk of interest.

10        Figures (12A) through (12E) show an example of a classification conducted on a document that has already been entered as a Knowledge Element within a selected Knowledge Kiosk.

Figures (13A), (13B) and (14) show an example of searches that can be conducted on the classifications created by the user with the options shown for example in Figures (12A) through (12E).

15        Figures (15A) through (15E) show an example of a user-defined "Favorites" page.

Figure (16) shows an example of a user-defined "Presentation Queue" folder.

Figures (17A) through (17C) show an example of the "Knowledge Element Viewer".

Figures (18A) through (18D) show examples of the results of various searches conducted on different types of information contained within the "Knowledge Element Profile".

20        Figures 19(A) through (19C) show examples of the information contained in a "Knowledge Kiosk Journal" which provides different ways of tracking all user activity with respect to a given Knowledge Kiosk.

Figure (20) shows a multimedia rendering of a particular Knowledge Element.

Figure (21) shows an example of a "Bulletin Board" page for conducting multi-user interactive activities using the Knowledge Kiosk.

25        Figure (22A) shows an example of the information intake and relevancy review process for a Knowledge Kiosk used for litigation.

Figure (22AA) shows an example of the information intake and relevancy review process for a knowledge kiosk used in the insurance renewal and review process.

30        Figure (22B) shows an example of a "Document Compare" function that arises from the "Relevance Refinery" concept.

Figures (23A) through (23E) show the creation, assignment and use of document sets (or "DocSets") for various pre-defined groups of users.

Figures (24A) through (24C) show an expansion of the document coding concept to allow "Objective Coding" to be combined with user-customized personal (or "PIC") coding.

5        Figure (25) shows the creation of "KDocs" which allow the addition of new content associated with a preexisting Knowledge Element contained in a DocSet.

Figures (26) and (26A) show an example of a messaging work station for exchanging priority information and an automated response.

10       Figure (26B) shows an example of another communication board for storing data or exchanging information.

Figures (27) shows an example of a format for displaying documents currently under review.

Figures (28) shows an example of a checklist of items relevant to a group of documents, such as insurance policies.

15       Figure (29) illustrates an example of a renewal cycle in the insurance industry.

Figure (30) provides examples of functional tools useful for policy review in the insurance industry.

Figure (31) shows an example of an interactive data entry form relevant to a group of documents, such as inquiries made during the insurance renewal process.

20       Figure (32) shows a document compare feature that allows the user to view two documents side-by-side.

Figure (33) shows an exception report containing system generated responses.

## **DETAILED DESCRIPTION OF EXAMPLES OF THE INVENTION**

25       The present invention provides an interactive system for managing and manipulating information. Four of the basic aspects of the system of the present invention are illustrated in Figure (1) by a two-dimensional depiction of a three-dimensional "Knowledge Pyramid," 10. The first aspect includes the "Research and Reference Library," 11, which takes advantage of concepts utilized in library science for uniform categorization of the various types information used in the knowledge management performed by the system. This characterization approach is  
30       designed to eliminate the redundancies normally associated with retrieval of data over the

Internet. Another side of the "Knowledge Pyramid," represents the "Work Process Application," 12, which uses the science of linguistics in defining information acquisition, exchange and workflow to permit categorization of the managed information using the library science concept. Combined, the application of library science and linguistics concepts allows use of the system to manage information in virtually any type of endeavor or business, including the litigation process for which the preferred embodiment of the present invention is adapted, and also including the insurance and medical industries and government, among others. The "Internet Multimedia Communications" side, 13, combines computer technology with the science of media production for presentation of the managed information in various multimedia audible, visual and textual digital forms and formats, to enable its representation in ways that enhance human understanding. The fourth side of the "Knowledge Pyramid" is "Work Management," 14, which combines the multimedia aspect of the invention with the computer software application and database programming necessary to make the system work over the Internet to permit interactive, multidirectional multimedia digital data communications originated from anywhere in the world and made instantaneously available anywhere in the world to or from any number of different locations simultaneously, if desired. When used together, these four sides of the "Knowledge Pyramid" of Figure (1) represent the combination of features that enable the system of the present invention to permit receiving, accessing, processing, storing, transmitting and utilizing audible, visual and textual data for real-time interactive use by multiple users in different remote environments, utilizing alternative combinable multimedia forms of presenting the information to simplify and maximize human understanding. The data managed by use of the various aspects of the "Knowledge Pyramid" comprises a Knowledge Kiosk which serves as a repository for all of the information needed to accomplish a particular activity or carry out a particular process (such as running a business operation, reviewing insurance policies or engaging in litigation). The Knowledge Kiosk serves as the "back end" database of information that is being managed by the system in connection with the particular activity to which the information relates, and the "front end" website applications used with the system allow the processing of this data for access by remote users over the Internet in the multimedia form(s) in which the information is desired to be used.

In an example of the invention, the system is accessible at a domain on the Internet. Figure Technology conventional to website design and use is utilized to establish the website and

enable it with functionality for receiving, accessing, processing, storing, retrieving, manipulating, transmitting and utilizing the data made available to, from and on the website. Website functionalities are implemented using standard website design tools and operating software such as for example Microsoft.NET, Microsoft VisualBasic, Microsoft Visual C++, Microsoft InterDev, Microsoft FrontPage, Adobe SDK, DT Search SDK, Macromedia Flash5 and Autodesk 3D StudioMax. Figure

The system website is remotely accessed by a user from anywhere in the world with a user name and a password using commercially available hardware and having Internet access through an internet service provider or a computer network web server. The hardware can include a wired or wireless personal or handheld computer configured with a standard web browser such as Netscape Navigator or Microsoft Internet Explorer (utilizing standard plug-ins such as Adobe Acrobat Reader for pictorial and graphics presentations and RealPlayer (produced by RealNetworks, Inc.) for multimedia presentations). A user login page is provided to capture the user name and password, an example of which is shown in Figure 2. Optionally, a second level authentication, such as random number verification can be implemented to provide different levels of access and capabilities specific to the user. Upon user authentication, the system software is accessed over the website to determine the user computer Internet Protocol (IP) address (which can be the user's normal local address or a remote address) to and from which further communications with the system will be directed. The system can also capture the time and date of the last communication made to or from the user and the history of that particular user's prior usage. Upon authentication, a secure sockets link (or SSL data communications link denoted by the designation "HTTPS") is set up with the user's IP address using standard one hundred and twenty-eight (128) bit data communications encryption (although other standard encryption methods could be used).

The system provides a "back end" database for storing the information comprising the various Knowledge Kiosk repositories being managed by the system in connection with the particular activity for which the system is being used. The database Knowledge Kiosks are accessed by the user with the "front end" website application software. The database schema implements the library science approach for uniform categorization of the various types information used in the knowledge management performed by the system. The database can be implemented by any standard internet (or web) accessible database that is structured query

language (SQL) compliant such as Microsoft SQL Server, Oracle 8I /9I, IBM DB2, Microsoft Access or FoxPro. The particular database schema design is developed based on the client's needs, and represents how the "library" is organized to categorize the particular types of information managed by the client's Knowledge Kiosk. Searching of the database schema can be  
5 done by any standard search scheme such as natural language and Boolean operator searches.

Due to the complex, abstract nature of this system, it is best explained by reference to examples of its use with particular applications. An example database schema for implementing the present invention in a litigation support context entitled "Categories of a Litigation Knowledge Kiosk Elements - Overview" is shown in Figure (5). The "pie-chart" organization of  
10 the schema represents the entire universe of information included in that particular Knowledge Kiosk. Upon receipt by the system, the digitized data (or Knowledge Element) to be included in the Knowledge Kiosk is categorized for storage in the "library" according to the database schema organizational concept developed for the client, and is retrieved from the "library" using the graphical user interface (GUI) navigation scheme provided by the website interface to access the  
15 data according to its stored category type(s). Each Knowledge Kiosk designed for a different application or use requires a different database schema "library" structure, which is dictated by the business processes and practices that are undertaken by the client in gathering and using the information contained in the Knowledge Kiosk. For instance, data may be appropriately classified in multiple categories. The system stores each unique piece of data at least once, but  
20 multiple classifications, such as elements or attributes, can be associated with the data. The system maintains each classification associated with each data piece. A user can call up certain data by searching for its classification or a relationship between classifications.

For example, in Figure (5) the database structure shown in the "pie chart" 20 is a representation of a typical litigation process in which information is gathered through discovery  
25 and presented for trial. A first section 21 of the "pie chart" of Figure (5) shows all of the materials in the case exchanged between the parties in response to discovery orders. A second section 22 of the "pie chart" of Figure (5) shows all of the court papers that have been filed and/or exchanged between the parties in the case. Another section 23 of the "pie chart" of Figure (5) shows all of the materials that are produced by the attorneys or exchanged between the  
30 attorneys defined as attorney work product. Another section 24 of the "pie chart" of Figure (5)

shows all of the materials that have been accepted for use at trial, such as deposition transcripts and demonstrative and trial exhibits.

In another example, the database scheme library structure is designed for use in the insurance industry. For example, the library contains all documents related to the insurance policy review and renewal policy. Such documents include policies and endorsements, binders and proposals, correspondence, digital photos, invoices, marketing materials, etc. The kiosk captures all of this information, which traditionally would have been scanned and loaded into the system, and scans the information through a digital scanning process. The format of the information to be captured varies including (but not limited to) document demographics and file information. Each is input or inducted into the system for classification. After scanning, the information will be manipulated by the client to produce searchable and reportable data. This will provide users in the insurance industry, for example, with the ability to reduce their error and omission costs.

Sections of the database schema "library" can be selected for various levels of restricted access such as attorney-client privileged information. For example, one level can permit access of certain items only to outside counsel of the opposing party and not to in-house counsel directly employed by the opposing party, while a second less restrictive level can permit access to all attorneys including in-house counsel but not other employees of the opposing party, while a third even less restrictive level can permit access by all parties to the litigation but not the public, while a final nonrestricted level can permit public access to the information accessible under that security level such as public documents that are filed with the court. In the insurance context, access can be limited according to the individual user's capabilities or purposes for using the system. For example, one level of access can permit access to a data entry level employee, a more restrictive second level can permit access to an employee responsible for completing a checklist or addressing action items generated during a policy review, and a third even more restrictive level can permit access only to managerial users, who may be accountable for the results. The level of access associated with a user dictates not only which documents will be viewable to the user but also what context they can be viewed in and whether the user will have the ability to add, change or modify information. Those individuals who are not permitted a certain level of access will not even be able to "view" the information in the restricted level so that it appears to such user that the information does not exist at all.

Each collection (or category) of data in the "library" database schema is broken down in terms of further subcollections where each smaller subcollection is "nested" within the larger collection(s) of which it is a subset. For example, a category encompassing all legal research can be further broken down in to that research dealing only with discovery information, which can in turn be further broken down into research dealing only with the discovery information produced by one of the parties to the case. This is done in order to prevent inadvertent production of nonapplicable information which is excluded from a particular subcategory but included within a larger category of which that subcategory is a part, and also for allowing quick and easy access to the most relevant information in response to a query for a particular item or type of information, thereby eliminating redundancies that lead to inefficiencies in retrieval of the desired information. This approach permits "cutting" the database schema "pie" in vertical "slices" to retrieve all items included in a particular category or subcategory of information, such as all attorney-client privileged information; a subcategory of which would include all attorney-client privileged information produced by the plaintiff; a subcategory of which would in turn include all attorney-client privileged information produced by the plaintiff on a particular legal issue. This approach also permits "cutting" the database schema "pie" by "layers" to retrieve information having a characteristic common to all (or less than all) categories and subcategories, such as all documents prepared by a particular opposing counsel whether or not attorney client privileged. The search scope can be still narrowed further by "cutting" the "pie" both by "slice" and "layer" to retrieve only those items included in a particular category or subcategory of information that have a sought characteristic, such as all attorney client privileged information prepared by a particular opposing counsel.

In another example, the "pie" or category is established to include all insurance policies having a certain commonality such as being based on a particular Insurance Services Office (ISO) form issued in a particular year. The system recognizes this layer of the pie or category as a relationship shared by the policies.

Figure (6) shows an example database schema for implementing the present invention in a multi-tier litigation support context entitled "Overall Organization – Multi-Tier Litigation Knowledge Kiosk". The database schema in Figure (6) is essentially a "layered cake" extension of the "pie chart" schema shown in Figure (5) to accommodate multi-party, multi-district litigation where more parties than a single plaintiff and defendant are involved and/or the

litigation is being conducted in more than one court and/or more than one lawsuit is involved. The same principles apply as described above with respect to Figure (5) in terms of "cutting" the cake "vertically" to access all documents of a given category no matter what case they relate to; "cutting" the cake "horizontally" to access all documents from a given case no matter what category they relate to; or "cutting" the cake both "vertically" and "horizontally" to access only those documents included in a particular category that relate to a given case and/or also have a certain characteristic in common. Similarly, the layered cake scheme applies with insurance data stored in a system kiosk. Vertical relationships are established among policies, for example, a relationship exists between policies issued in different years or in different regions of the country, but the policies may be based on the same underlying form.

In the same way that the system applies library science and linguistics concepts to data stored in the system to classify its elements and attributes, it also classifies altered data. Data may be altered by system users after its initial storage on the system. Users may, for example, revise the data, incorporate another document with it, include handwritten notes. Tools are provided to allow a user to scrub or remove handwritten notes or other markings from documents. Each new version of the data can be separately stored, classified and managed.

By way of an example, the same item of information may have been altered during the litigation process, requiring its inclusion or storage twice in the database in two different categories or subcategories even though it represents the same item. For example, a single document that has been presented by a party in discovery will require inclusion in the discovery document category, and will also require inclusion as a separate and distinct item in the deposition exhibit category if used in a deposition, and will require further inclusion as yet another separate and distinct item in a third category of altered deposition exhibits if interlineated with handwritten notes during the deposition. On the other hand, if the item of information has been referred to in different ways but has not been physically altered, the database can store it only once and subsequently refer to it by all of the different identifications which have been used for that item. For example with respect to the "cake layer" database of Figure (6), the same document produced or deposition taken in two different cases of a multi-district litigation will require inclusion or storage only once in the database if it has not been altered in either of the two cases, but a reference to each case will be required in identification of the document or deposition transcript so that it can be retrieved with respect to either case.



Figures (22A and 22(AA)) show examples of the information intake and relevancy review process for a Knowledge Kiosk in the litigation and insurance industries, however, the range of types or forms of information appropriate for the system is limitless. The information may constitute physical evidence, such as videos, photos, objects, or electronic files, such as emails, Powerpoint presentations or maps. The information is first digitized (if not already in electronic form) and then inducted into a secure electronic repository. The information is included in the Knowledge Kiosk of interest, such as a particular litigation matter or insurance broker review process. Automated agents then process each piece of information often referred to as a Knowledge Element in a "Relevance Refinery" which automatically highlights information of interest in a particular Knowledge Element based upon criteria pre-defined by the user. The Knowledge Element then undergoes a manual "On-Line Relevancy Review" to refine the results produced by the Relevance Refinery, resulting in selection of only those Knowledge Elements fitting the user-defined criteria. These Knowledge Elements are then used in further activities undertaken by the user (in this example, deposition preparation or trial preparation). Figure (22B) shows an example of a "Document Compare" function that arises from the "Relevance Refinery" concept. "Document Compare" analyzes selected text from different documents (or different versions of the same document) to highlight the differences between them or to highlight selected text. This allows quick and easy review of changes to document language to be made by the user.

## System Use

In an example of an embodiment, the system provides a web page to serve as the launching point for accessing the various Knowledge Kiosks containing the data being managed by the system. The launching page, for example, is referred to as the "Passport" page and is illustrated at Figure 3 for use in a litigation setting. As shown in Figure (3), the "Passport" page lists the names (i.e., "V3 Sample Litigation" and "V4 Litigation") of the particular Knowledge Kiosks to which the user has access (by recognition of username, password and security authentication). A particular Knowledge Kiosk can be selected in a standard manner such as by using a mouse to "click on" the portion of the screen containing the desired Knowledge Kiosk designation. The "Passport" page adapts to reflect the types of data contained and managed by the kiosk, permitting access to users based upon client specifications. The "Passport" page can

also be accessed from other pages of the Kiosk. Figure (3A) shows a calendar capabilities page built into the Kiosk in a preferred embodiment of the system. It shows a link to the "Passport" page and other areas of the Kiosk.

Figure (3B) illustrates another view of the calendar integrated into the kiosk. The calendar is designed to keep track of deadlines or appointments input directly by a user or determined based upon automated review of data inducted into the system. Data containing pertinent dates may be quickly referenced and dates coordinated by using the capabilities displayed in Figure (3B), for example.

Figure (4) shows an example of the "Fast Tracks" page for the Knowledge Kiosk selected from the "Passport" page, which is preferably automatically loaded once the Knowledge Kiosk is selected. The "Fast Tracks" page preferably provides access to the most commonly-used and/or newest information in that particular Knowledge Kiosk, such that the most essential information included in the Knowledge Kiosk is made universally available to all users of the system with "one click", no matter what their experience or skill level in using the system. The "Fast Tracks" page serves as the launching point for accessing (through standard drop-down menus and/or graphic "click on" icons) the executable software code files that lead to use of the different features of the system which allow retrieval of data from the selected Knowledge Kiosk and manipulation of that data for presentation in the various form(s) in which the data is desired to be used. Selection of the various options on the "Fast Tracks" page leads to different standing queries for accessing the Knowledge Kiosk database to provide the type(s) of information sought under that option. The "All Kiosk View" portion of the "Fast Tracks" page will lead to a view of the entire "library" of files containing the information in the selected Knowledge Kiosk.

Selection of the "Home" or the "Fast Tracks" button leads back to the "Fast Tracks" page as shown for example in Figure (4). Selection of the "Passport" button leads back to the "Passport" page as shown for example in Figure (3). Selection of the "Favorites" button leads to a page as shown for example in Figure (15) where various user-defined folders can be set up to permit organization of the information most commonly used by that particular user. Selection of the "The Show" button provides access to an Internet broadcast of selected materials located in the Knowledge Kiosk as shown for example in Figure (16). Selection of the "Submit" button leads to submission of an item of information to the Knowledge Kiosk as shown for example in Figure (7). Selection of the "New Kiosk Elements" leads to a listing of all files created in the

Knowledge Kiosk database in the prior week or in the current week or on that particular date, as provided by the menu item selections, while selection "New Court Papers" and "New Correspondence" buttons provides a similar listing for those categories of information. Selection of the "Case Coordination" button provides all documents shared between cooperating users of the system (such as codefendants in a lawsuit) while selection of the "Executive Summary Reports" button provides an executive summary of the detailed information in the data covered by the summary categories. Selection of one of the "Search" options leads to a search of the Knowledge Kiosk database of the type selected and described for example with reference to Figures (8) through (14) below, while selection of the "Exit" button leads to an exit from the system. Depending on the particular user or the particular application or use for the Knowledge Kiosk, the combination of features available on the "Fast Tracks" page may change.

Another view of the library of files and functionalities is shown, for example, in Figure (3C). Figure (3C) is an example of a page revealing predefined categories of information pertaining to a particular element. In this instance, it indicates case information and file status information related to a selected matter. Users can select the information from a list of topics, such as "general" or "cases." "Cases" can include subtopics. Subtopics may further delineate that topic by its attributes or elements, including for example "by plaintiff," "by state" or "by case name," such as is shown along the left column. The "status" for a selected matter is revealed. In this example, it includes dates related to filing, transfer, dismissal, removal, remand, etc. which are shown along the right side of the page. As additional data is inducted into the system, the status is updated as appropriate.

As shown for example in Figures (15A) through (15E), the "Favorites" page allows various user-defined folders to be set up to permit organization of the information most commonly used by that particular user. As shown in Figure (15A) and (15B) the basic folders predefined for every user are the "Root" folder, the "Forward" folder and the "Group" folder. The "Root" folder is the base folder into which all items appearing on the "Favorites" page are initially placed in the absence of any other defined folders. The "Forward" folder allows the information it contains to be forwarded to any other user authorized to have access to the highest security level information contained within the folder, in accordance with the security level classification set up for that type of information as described with reference to Figures (5) and (6) above. The "Group" folder provides segregation of the information it contains to permit

automatic access by all users within the defined group once the information is placed within the folder by any user in that group. The remaining folders can be custom designed by the user to hold the types of information the user desires to place within those folders.

Figures (23A) through (23E) show the creation, assignment and use of document sets (or "DocSets") for various pre-defined groups of users. Essentially, DocSets expand the "Group" folder concept to allow dividing an entire Knowledge Kiosk into groups (or DocSets) of Knowledge Elements that are to be shared among selected users. Each DocSet can be assigned to a different group of users with different access rights for each user. Furthermore, "Discussion Forums" can be created for allowing online collaboration amongst the users assigned to a particular DocSet. Each Knowledge Element assigned to a DocSet can be independently accessed by an assigned user directly from that DocSet without an additional search.

Furthermore, different DocSets can be merged together to contain all Knowledge Elements in each merged DocSet or combined into a new DocSet containing all Knowledge Elements in common between the combined DocSets. Figure (25) shows the creation of "KDocs" which allow the addition of new content associated with a preexisting Knowledge Element contained in a DocSet. The KDoc allows content to be included such as notes containing comments on a Knowledge Element or instructions on its disposition. The content can be added by "cutting and pasting" information from any other Knowledge Element or from an external source. Access rights to KDocs are defined in the same manner as described above for DocSets and a history of access to the KDoc is also maintained.

Figure (16) shows an example of a user-defined "Presentation Queue" folder on the "Favorites" page which allows the user's retrieval of a Knowledge Element object from a Knowledge Kiosk contained in the database for "broadcast" display to all other authorized users via "The Show" button described with reference to Figure (4). Figure (16) lists three Knowledge Elements representing three different pieces of evidence produced in litigation that have been digitized and categorized for inclusion in the database as described above. The first Knowledge Element is a physical exhibit, the second is an article in a newspaper, and the third is a video deposition along with the deposition transcript. By placing these Knowledge Element objects in a user-defined "Presentation Queue" folder located on that user's "Favorites" page, the system can be used to "broadcast" the content represented by the digitized Knowledge Element(s) to multiple users in multiple locations anywhere in the world, simultaneously and in real-time if

desired, as long as the recipient has been authenticated to receive the content of that Knowledge Element as described above. The digital nature of the stored Knowledge Element allows its content to be combined with any one or more other Knowledge Elements to create a multimedia presentation displaying the combined content, either audibly, visually, textually, or in any combination thereof. To do this, for example, the "Passport" page of Figure (3) is used to select the desired Knowledge Kiosk from which the Knowledge Element will be retrieved. For example, the Knowledge Element to be "broadcast" is retrieved by the sender through a search for "trial evidence" conducted from the "Fast Tracks" page for that Knowledge Kiosk as shown in Figure (8A). The retrieved Knowledge Element is then placed in the sender's "Presentation Queue" folder as shown in Figure (16) where its multimedia content can be "broadcast" to other authorized users by the sender's selection of "The Show" option from the screen of Figure (16). Authorized recipients can then access the "broadcast" of that Knowledge Element by input of the sender's name upon selection of "The Show" button from the recipient's "Fast Track" page as shown in Figure (4).

Figures (8A) through (8H) show examples of the various searches that can be conducted for retrieving a Knowledge Element from a particular Knowledge Kiosk. Figures (8A) and (8B) show a search conducted by the category or subcategory under which the Knowledge Element is classified in the Knowledge Kiosk database such as that shown in Figures (5) and/or (6). Figures (8C) and (8D) show a keyword search conducted by fields in the classification profile created for the Knowledge Element when it is entered into the database. Figure (8E) shows a search conducted by an exhibit number associated with the Knowledge Element before it is classified and entered into the database, while Figure (8F) shows a search conducted by the "knowledge element identification number" ("KEID") which is attached to the Knowledge Element as it is entered into the database. The exhibit number for a particular Knowledge Element may be re-used whereas the KEID is never re-used – it is unique to each individual Knowledge Element entered into the database, even if that particular Knowledge Element represents a document with the same exhibit number that has been entered into the database more than once (for a reason such as that described above).

In another example of the invention, information is retrievable by a more structured or organized search by predefined category selected by the user or system manager. In an example specific to the insurance industry, categories include one or more of the following: the office

where the account was opened, the insured name, policy number, policy date, and line of coverage, to name a few. They are accessible at a "File Finder" page, an example of which is shown as Figure 8I. The File Finder provides the user with a quick and efficient method for locating policies and related documents. Users can limit the number of results populated by  
5 narrowing their search to specific criteria such as client, line of coverage, document type, or the policy period they are trying to recover. Another way of providing a search access to data is through a "search elements" page. An example of a "search elements" page is shown at Figure (8J). Again, the system front-end user-interface is designed depending upon the type of data stored in a kiosk and anticipated use of the data. Various designs may be implemented that will  
10 facilitate users' access and manipulation of data.

Figure (9) shows an example of a "Knowledge Element Classification Profile" containing fields providing information describing and classifying the Knowledge Element. This information is entered into the "Knowledge Element Classification Profile" upon placement of the Knowledge Element within its Knowledge Kiosk. It allows storage of that Knowledge  
15 Element within a database schema such as that shown in Figures (5) and/or (6) as well as retrieval of the Knowledge Element using all of the search techniques described herein. This information includes "metadata" as well as user-specific information classifying and describing that particular Knowledge Element. Another example, illustrated at Figure 9a, shows all of the information gathered at upload that is related to an item of information. This station also allows  
20 the users to edit this information.

Figures (18A) through (18D) show examples of the results of various searches conducted on different types of information contained within the "knowledge element profile" of Figure (9), such as document classification and type as shown for example in Figure (18A), document originator as shown for example in Figure (18B), document creation date as shown for example  
25 in Figure (18C), and exhibit number as shown for example in Figure (18D). Figures (19A) through (19C) show examples of the information contained in a "Knowledge Kiosk Journal" which provides different ways of tracking all user activity with respect to a given Knowledge Kiosk. Important to note is that the Knowledge Kiosk is being continuously and dynamically updated as new information is being entered, such that the same search conducted on the same  
30 criteria will yield the newly entered information as well as the pre-existing information fitting the search criteria, if the search is conducted after the new information has been entered.

Figures (8G) and (8H) show an example of a boolean search scheme where various operators (i.e., "AND", "OR", "NOT", "W/5", "W/25") are used to define search criteria. Figures (11A) through (11D) show the results of an advanced boolean search conducted to locate a particular data string (in this example "Abd%alla") within any Knowledge Element in the Knowledge Kiosk of interest. As shown in Figure (11A) the search is conducted in "all kiosk view" which causes a search of all Knowledge Elements within the Knowledge Kiosk of interest. Figure (11B) lists all Knowledge Elements within the Knowledge Kiosk that contain this searched data string, while Figure (11C) shows the stored digital image (with the searched string highlighted) of a Knowledge Element that is selected from the list. As shown in Figure (11A) and explained in Figure (11D), such a search can be conducted to accommodate "fuzziness" within the digitized version of a given Knowledge Element so that the search will provide a level of forgiveness in retrieving results that do not exactly match the search request, due to potential errors in the request or inaccuracies caused in digitizing the knowledge element (in this case the "%" constitutes an error in the searched string "Abd%alla" that does not impact the retrieval of valid results which disregard the error).

Figures (12A) through (12E) show an example of a classification conducted on documents to be produced in litigation that have already been entered as Knowledge Elements (and assigned a KEID) within a Knowledge Kiosk related to the litigation. Figure (12A) shows the Knowledge Element digital image of a document to be produced in the litigation, while Figure (12B) shows an example of the options available for classifying portions of the document in order to determine if (and how) it should be produced (i.e., "Privileged", "To Be Produced", "Foreign Language", "Non-Responsive", ect.) Figures (12C) and (12D) show a classification history for the document which enables the tracking of changes made to the classification (and to those specific portions of the document in which the classification has been changed) to allow a historical review of the work done on the document. Finally, Figure (12E) shows the most current classification information for the document, including the status of its production in the litigation (i.e., "To Be Produced"), the security level under which it is to be treated (i.e., "Confidential"), the pages classified (i.e., "Pages 1-2") and the kiosk user creating the classification (i.e., "W.West"). This information is stored in the Knowledge Element profile for the document in order to enable later searching and retrieval of the document according to classification status using any of the search methods described herein. Figures (13A), (13B) and

(14) show an example of searches that can be conducted on the classifications created by the user with the options shown for example in Figures (12A) through (12E). Figure (7) shows an example of a submission form completed by the user for storage of an item of information (such as a document to be produced in litigation) within a selected Knowledge Kiosk. Figures (24A) through (24C) show an expansion of the document coding concept to allow the "metadata" (or "Objective Coding") described above with reference to the "Knowledge Element Classification Profile" of Figure (9) to be combined with user-customized personal (or "PIC") coding as described above with respect to Figures (12A) through (12E). As shown in Figure (24A) this coding information can be combined onto one screen with the coded Knowledge Element, or the coding information and Knowledge Element can be split onto separate screens as shown in Figures (24B) and (24C).

Figures (17A) through (17C) show a Knowledge Element retrieved using the "Knowledge Element Viewer" which allows a conventional software module (or "plug-in") for manipulating combined textual/graphical files (such as Adobe Acrobat) to be used to extract relevant data from the Knowledge Element for use in the multimedia presentations described with reference to Figures (10) and (20). Figures (10A) through (10D) show an example of an advanced search designed to retrieve a multimedia rendering of a statement of particular interest made in a videotaped deposition. Figure (10A) shows a search conducted by Knowledge Element category/classification ("trial evidence"/"deposition video") which reveals all Knowledge Elements containing video of the selected deponent ("William Crabbe") that is to be used as trial evidence. From these results, a further search is conducted in Figure (10B) to retrieve those portions of the deposition video and associated transcript where the deponent made the specific statement of interest (i.e., "...wait 11 months..."), the results of which are shown in Figure (10C). Upon "click on" selection of the search results in Figure (10C), a portion of the deposition transcript text containing the statement of interest is revealed as shown in Figure (10D), where the viewer is led directly to the page and line number(s) where the statement of interest is highlighted. The textual portion of the deposition transcript containing the highlighted statement of interest shown in Figure (10D) can be combined with the videotaped presentation of the statement shown in Figure (20) to form a multimedia Knowledge Element (distinct from both the Knowledge Element containing the textual statement and the separate Knowledge Element containing the videotaped statement). This allows the combination of different Knowledge



Elements together to provide a three-dimensional (3-D) multimedia presentation; comprising for example a videotaped deposition, the textual rendering of that deposition, and potentially a physical exhibit (such as a document authored by the deponent) that was introduced in the deposition and was being discussed in the portion of the transcript that is of interest.

5           The classification searches conducted for example in Figures (13A), 13(B) and (14) can be used in combination with a "Bulletin Board" page as shown for example in Figure (21) to permit real-time multi-user interaction to dynamically select and change the use of different Knowledge Elements for multimedia presentations like those shown in FIG (20) based on changing circumstances caused by the live testimony presented during trial. The powerful  
10       impact of viewing the videotape and text of the deposition statement (in combination with each other and with the piece of physical evidence being discussed) is compounded by the ability to make such a multimedia presentation available on-demand by authorized users anywhere in the world, such as for example in conducting a real-time impeachment of the deponent using the multimedia presentation while the deponent is on the witness stand testifying at trial.

15           In another example, the system provides a messaging workstation as shown in Figures (26) and (26A). The messaging workstation allows both users and the system to exchange priority information. There are system-generated alerts, which escalate messages to users and management, for example, stating policy review standards are in danger of failing to meet required deadlines. The auto notifications are sent to both the Kiosk's internal messaging  
20       system and the user's desktop email. Users may create messages allowing other users, such as members of a litigation or insurance policy review team, to share and communicate important information easily within the Kiosk.

          In less urgent situations, a "communicate" station can be used to store and exchange topical information, such as may be related to administration, sales, sales and marketing,  
25       documentation, etc. A web page for topical information related to documentation is shown in Figure (26B) for example. This is an especially useful tool for sharing information that changes depending upon outside factors. It can act as a bulletin. Communicate is also an overview access point for storing topical data, such as documents responsive in discovery during litigation.

          In another example in the insurance industry, a "quick links" feature, shown in  
30       Figure (27), contains links to the users "Policies in Review" and easy access to their "Client" files. The Policies in Review station displays hyperlinks to all policies that the user currently has

under its review. This includes policies that have been forwarded for review by lower level policy checkers, policies retrieved by the individual from the Document Queue, and Policy Review stations that user's have created, but have not yet completed. Policies will disappear from this station after the user has completed their signoff on the exception report. Currently, professional standards dictate that a policy must be reviewed within 30 days of receipt (policy stamp date) therefore a "Days Old" indicator is present to inform the user how long the review has been outstanding. This can be adjusted as standards adjust. A user's personal filing system in the Kiosk is represented in quick links as "my clients" station. Users may create file folders, search for documents and add documents to a folder, combine Folders or intersect or differentiate folders. Folders, for example, an "interest folder" agent creates a file folder that contains the common documents found when comparing two or more folder a "difference folder" agent creates a folder that contains the uncommon documents found when comparing two or more folders.

This preliminary checklist screen allows users to define the line of coverage checklist that they need to begin their review process. In an example, a "line of coverage checklist" is illustrated as shown in Figure (28). The users (or the system depending on what documents are in the list) will define whether the policy they are reviewing is a new policy or a renewing policy. The system contains an automated comparison agent that is designed to track changes in policies. The comparison agent tracks the policy and subsequent endorsements or other related data, such as former policies, photos, etc. All data associated therewith is categorized by the system, as described previously, to be "appended" to the original. It is also categorized by its elements or attributes, such as policy holder, policy type (or ISO Form), effective period, policy reviewer, etc. The comparison agent allows users to compare very similar forms that may have a few key differences that could lead to errors and omissions. The comparison agent assists agents or brokers by automating some of the tasks typically undertaken during the policy renewal and review processes, for example. An illustration of an example of a renewal cycle is shown in Figure 29. Some of the tasks eased by automated features of the system are shown, for example, in Figure 30.

For instance, if the policy is a renewal and a checklist has been completed for the prior year, all of last year's answers will pre-fill in the checklist for quick comparison. Choosing a type of business will allow the database to create a demographic profile on coverage

characteristics that are pertinent to individual types of business. The schedule of forms entry area is an important tool for capturing which forms relate to particular types of coverage. This will allow the checklist pre-fill process to become more robust over time. As an example, a user can choose a form as a primary form, it initiates filling in answers to the checklist questions that relate to its coverage detail. When the user chooses a secondary form, the system will answer the questions related to its coverage detail. If the primary and secondary form provide conflicting answers to a coverage question the secondary coverage forms answer will be used to fill in the checklist. When endorsements are entered at a later time than at initial policy receipt the user should click the maintenance button to continue.

An interactive checklist is also provided. This checklist is an interactive data entry form that, for example, allows users to complete the necessary coverage questions to determine if the policy is correct as shown in Figure (31). Questions that are pre-filled in are designated in red, or by other varying font, have been filled in by the system and reflect the answers that were provided by entry of the coverage forms on the line of coverage screen. The checklist uses logic to alert users that certain questions are irrelevant based on previously answered questions. It also provides, through question mark icons for example, a clarification of each of the questions asked. The "I" Information Icon provides a brief description of how the primary coverage form deals with the coverage question in the form. Auto-mentoring tools provide users with less specific knowledge of the forms contained in the policy documents with a means of understanding the coverage issues without leaving the system. The system also provides users with quick access to the policy pages that pertain to the individual coverage questions through the context links provided by the language refinery. When clicked, underlined questions highlight specific answers within the policy document view.

A document viewing screen provides a full set of Acrobat document manipulation tools as well as a few proprietary tools. A "Context Link" function shows users where answers can be found that relate to their specific coverage questions. It allows the user to view two or more documents side-by-side as illustrated in Figure 32. For example, the user can view two insurance policies issued in the same year to similarly situated insureds, or a current policy and a proposed policy. The comparison agent identifies differences between the two policies using a "compare" function. The differences are displayed in highlighting or other marking to reveal differences in text. Alternatively, the agent could generate a report identifying the differences, or

a short cut tool for locating differences that provides a text synopsis of the page numbers on which the distinctions occur. A user can jump to the identified pages without scrolling entire documents. This is especially useful for locating differences in lengthy documents, for example.

As users review insurance policies, a checklist of questions and answers relevant to the internal review process is generated. Some questions, such as account name, address, insurance company, etc., are answerable by the system intelligence using the library and linguistics concepts. Thus as policies and related data are inducted into the system and refined, system tools are utilized to automatically respond to a standard set of questions. This minimizes or eliminates the need for manual review and response for all policies. In an example, the tool assists a reviewer to compare an expiring policy with a renewal policy and create an exception report, as shown for example in Figure 33. The “exception report” station provides the user with an analysis of the information that was answered in the checklist. Section one titled “system generated answers” shows every place where the system automatically prefilled the checklist, through either information provided by the user during the upload process or through the prefills provided by the system based on the entry of the forms in the line of coverage screen. Section two shows users the specific differences that are present between last year’s policy and this year’s policy. In year two the last year’s policy information will all be red as it will prefill from this year’s list. These differences will alert knowledge based users that critical policy issues may not have been addressed correctly in the issued policy. The “discrepancies” section that follows shows where previous users have identified questions or left comments for the higher level reviewer to review and take action on if required.

The “action items” section that follows provides users with a tracking and standardized correspondence mechanism that allows them to communicate policy issues with both clients and carriers in an automated system. The user decides which issues that have been identified and need to be included in the correspondence to either the client or the carrier by checking the boxes under the “Include in Report” subsection. By clicking the “carrier report” button or the “client report” button (shown in the screen shots) users can manipulate the autogenerated letters or reports to reflect the information they wish to send.

The “checklist overview” button contained at the bottom of the station allows users to see a static review of all the client policy information related to the policy. This view is very valuable to the third level reviewer who needs to sign off on the station before it is considered

complete. It provides a window into the entire process where they can review all information in one place. The exception report allows users to send the policy review station on to other users for review with all the information contained in the original users station. The link to the station will appear in the next level reviewers kiosk email as well as their desk-top email account.

- 5 When they click the link the station will be transferred into their policies in review station for tracking. This sign-off procedure also provides a tracking mechanism so that issues defined and executed at one level are tracked to their conclusion, providing alert mechanisms to users and their managers if action items or policy reviews are at risk of being delivered late. For issues left unanswered, a monitoring feature tracks the number of days the issue remains open. A reminder  
10 email can be automatically sent to the user after a select amount of time has passed. A standard client report can be generated and associated with policies.

- While the invention has been described in connection with what are presently considered to be the preferred embodiments, it is to be understood the invention is not to be limited to the disclosed embodiments, but on the contrary is intended to cover various modifications and  
15 equivalent arrangements included within the spirit and scope of the appended claims.

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